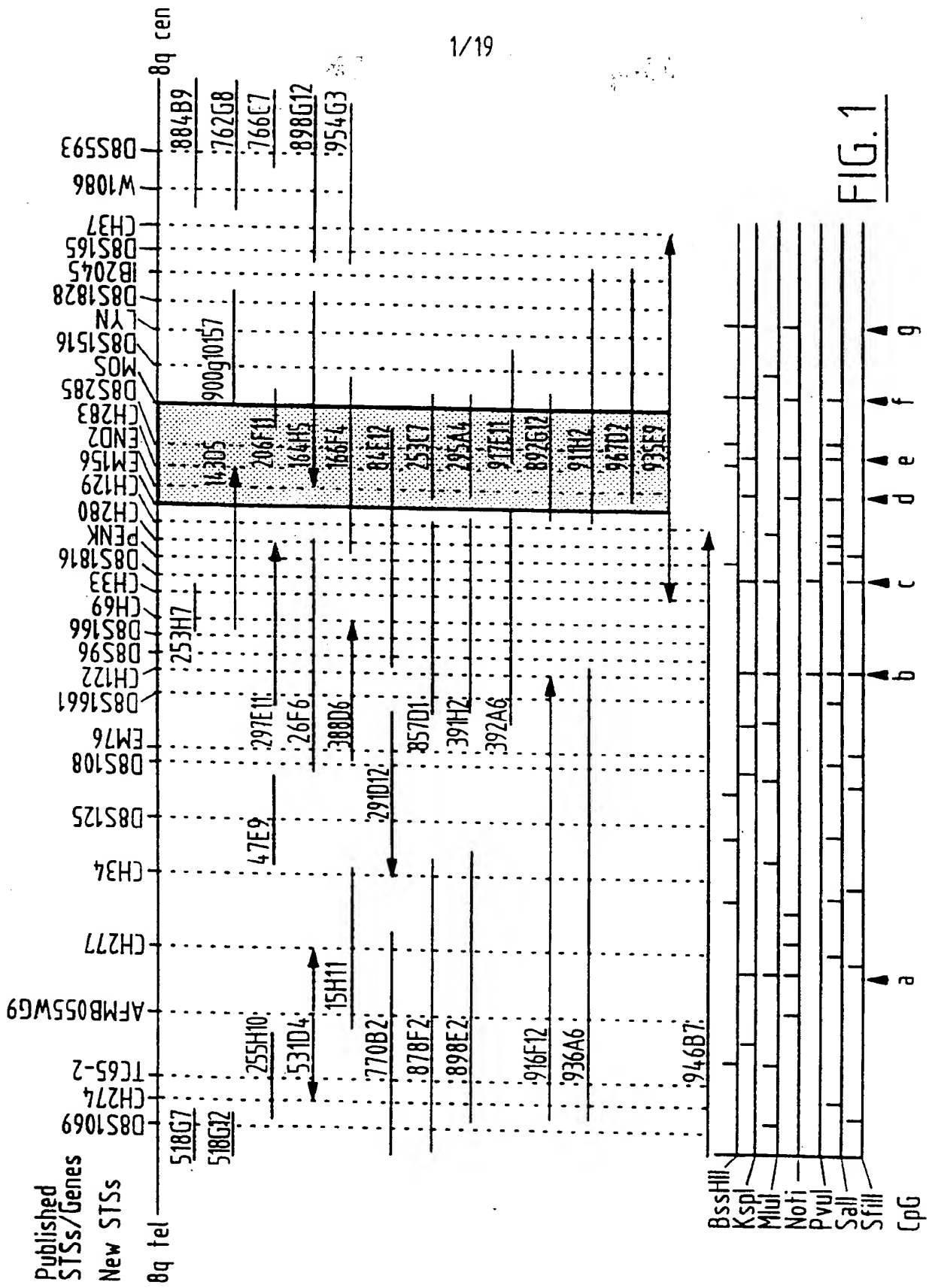
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8q tel
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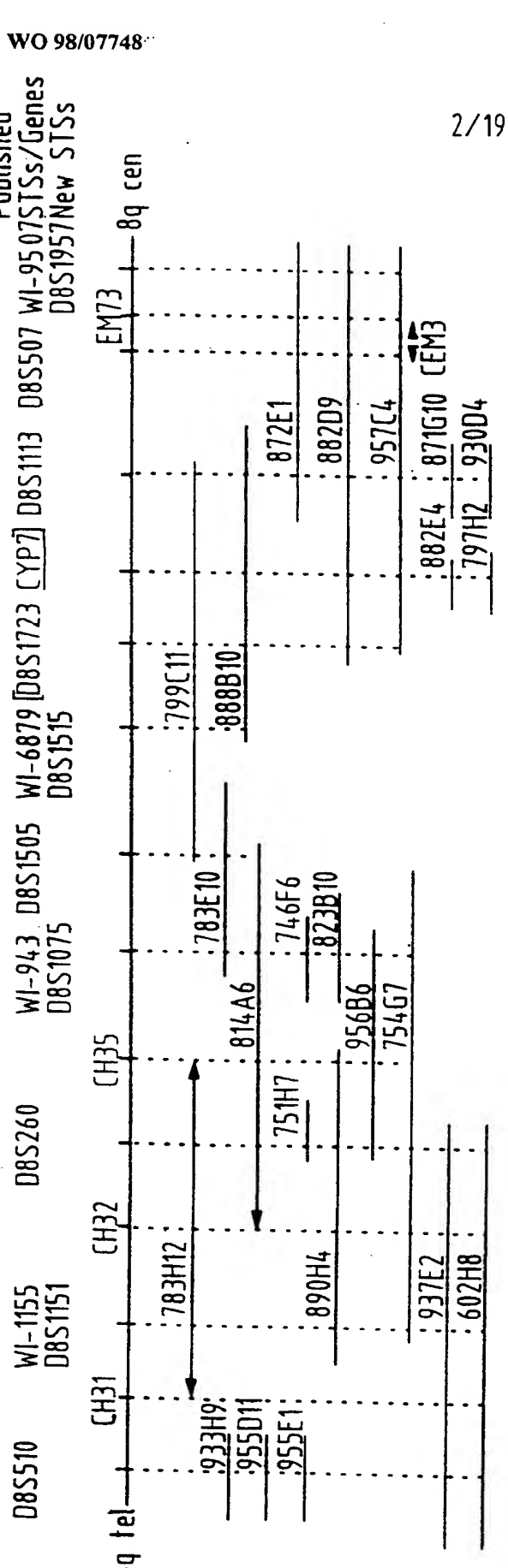
CH37
D8S165
IB2045
D8S1828
LYN
D8S1516
MOS
D8S285
CH283
END2
EM156
CH129
CH280
PENK
D8S1816
CH33
CH69
D8S166
D8S96
CH122
D8S1661
EM76
D8S108
D8S125
CH34
CH277
AFMB055WG9
TC65-2
CH274
D8S1069
884B9
762G8
766E7
898G12
954G3
900g10157
14.3D5
206F11
164H5
166F4
84E12
253C7
295A4
917E11
892G12
911H2
967D2
935E9
253H7
297E11
26F6
388D6
291D12
857D1
391H2
392A6
47E9
15H11
255H10
531D4
770B2
878F2
898E2
916F12
936A6
946B7
518G7
518G12
BssHII
KspI
MluI
NotI
PvuI
SalI
SfiI
CpG
a
b
c
d
e
f
g

FIG. 1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D8S1957New STSs
D8S1113
D8S1723 [YP7]
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WI-943
D8S1075
D8S1505
D8S260
WI-1155
D8S1151
8q cen
8q tel
EM73
CH35
CH32
CH31
D8S510
799C11
888B10
872E1
882D9
957C4
882E4
871G10
CEM3
797H2
930D4
783E10
746F6
814A6
823B10
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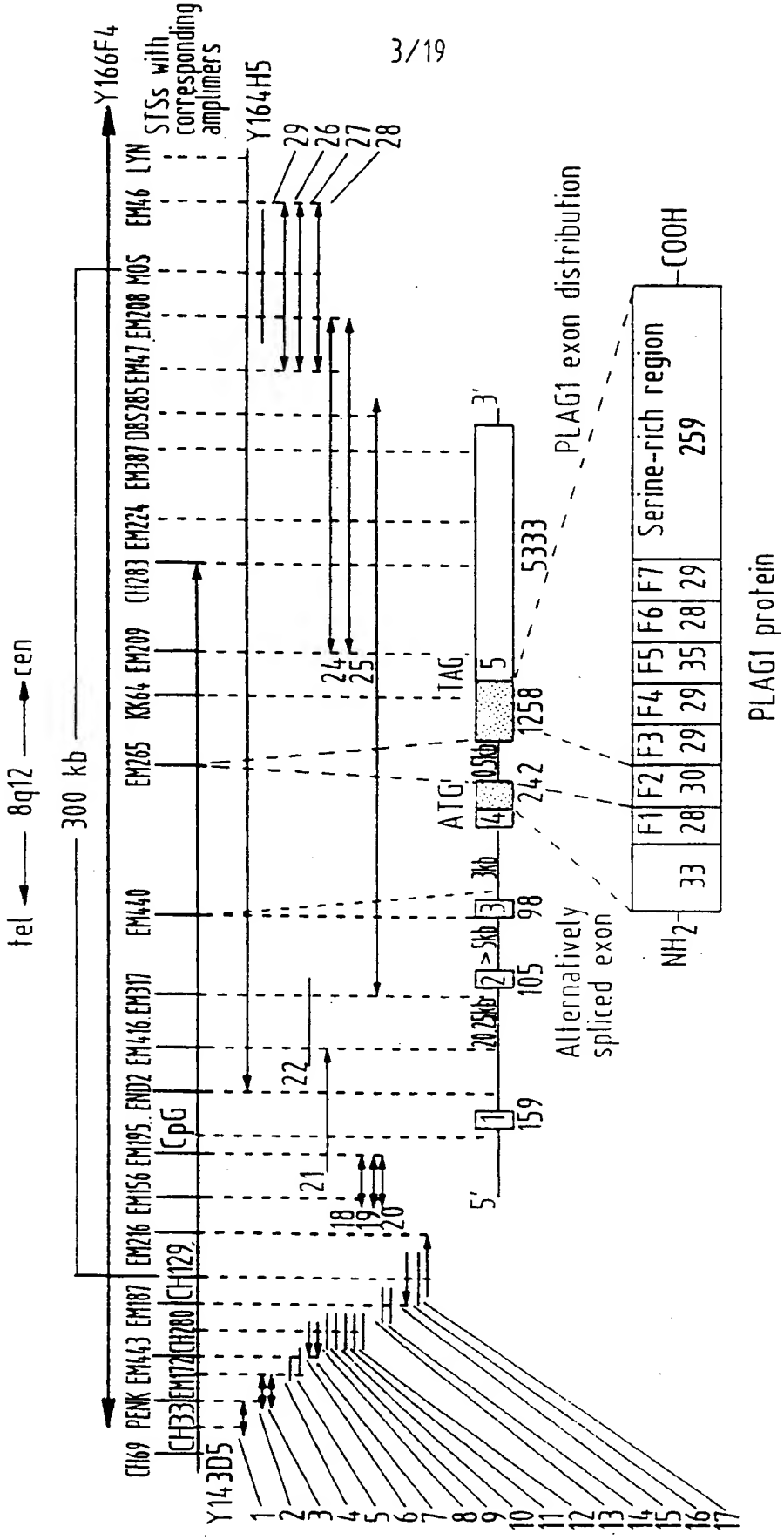
754G7
783H12
890H4
937E2
602H8
933H9
955D11
955E1

FIG. 2


tel
8q12
cen
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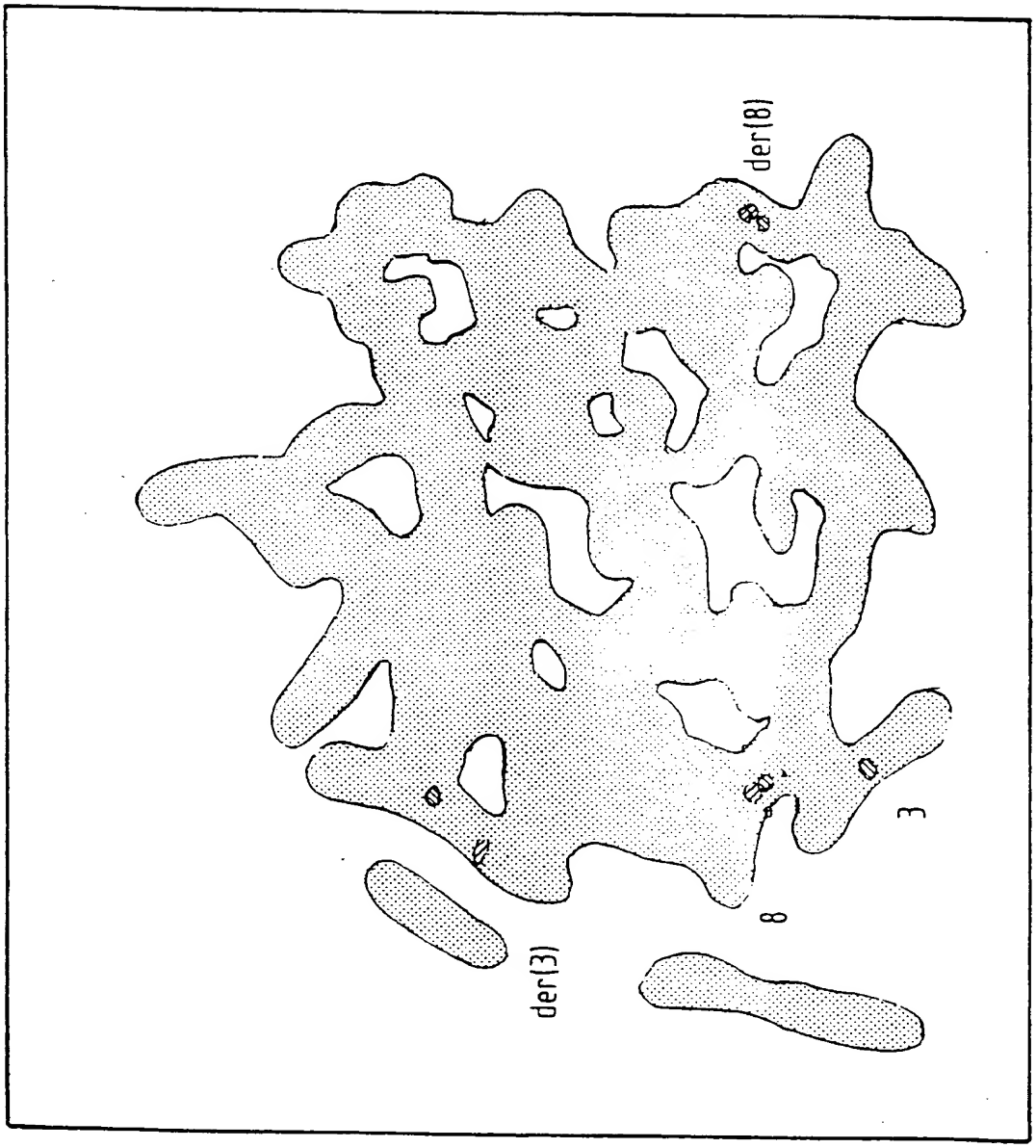
Y166F4
Y164H5
STSs with corresponding amplimers
29
26
27
28
24
25
ATG
TAG
5333
1258
242
98
105
159
PLAG1 exon distribution
Alternatively spliced exon
COOH
NH2
Serine-rich region
259
PLAG1 protein
F1 F2 F3 F4 F5 F6 F7
33 28 30 29 29 35 28 29
CpG
Y143D5
CH169 PENK EM443 EM187 EM216 EM156 EM195 END2 EM416 EM317 EM440 EM265 KK64 EM209 CH283 EM224 EM387 D8S285 EM47 EM208 MOS EM46 LYN
CH33 EM172 CH280 CH129
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
18 19 20 21 22

FIG. 3A

FIG. 3B



PLAG1 cDNA sequence

FIG. 4A

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ATTCCGCGGG CGGTGTAGAG GCGGCGGACG GGCCGGAGGG AGGATGTTAA 150
AGCCCCGCGG TTGCCTCTTG GTGCTGCCTT GGCCGTATTT GGCACCCAGA 200
ATGCTTCATT CTGTGACGGT CTATTAATAA GGTTGCCTTG CTAGAGTTTG 250
GAGCAGGGCC TCAGATTGGC CAAAATGGGA AGGATTGGAT TCCACTCTCT 300
TCCACGAAGA GTCAATGGGA CTGGCTAAGA TCAAAGTCTG AGGCTTTTTC 350
CATCAGTAAT CAGTCCCTTT TTGCTTTCTT TTACGACCAC ATGAAACTTG 400
AGAAGCCACC TAAAGCTATA TCATTTAGTG GAGTTGGGCA GTTCCCAAGT 450
GTCCAACAAG AAGGCCTGGT TTAGGCTGCG ATGGCCACTG TCATTCCTGG 500
TGATTTGTCA GAAGTAAGAG ATACCCAGAA AGTCCCTTCA GGGAAACGTA 550
AGCGTGGTGA AACCAAACCA AGAAAAAACT TTCCTTGCCA ACTGTGTGAC 600
AAGGCCTTTA ACAGTGTTGA GAAATTAAAG GTTCACTCCT ACTCTCACAC 650
AGGAGAGAGG CCCTACAAGT GCATACAACA AGACTGCACC AAGGCCTTTG 700
TTTCTAAGTA CAAATTACAA AGGCACATGG CTACTCATTC TCCTGAGAAA 750
ACCCACAAGT GTAATTATTG TGAGAAAATG TTTCACCGGA AAGATCATCT 800
GAAGAATCAC CTCCATACAC ACGACCCTAA CAAAGAGACG TTTAAGTGCG 850
AAGAATGTGG CAAGAACTAC AATACCAAGC TTGGATTTAA ACGTCACTTG 900
GCCTTGCATG CCGCAACAAG TGGTGACCTC ACCTGTAAGG TATGTTTGCA 950
AACTTTTGAA AGCACGGGAG TGCTTCTGGA GCACCTTAAA TCTCATGCAG 1000
GCAAGTCGTC TGGTGGGGTT AAAGAAAAAA AGCACCAGTG CGAACATTGT 1050
GATCGCCGGT TCTACACCCG AAAGGATGTC CGGAGACACA TGGTGGTGCA 1100
CACTGGAAGA AAGGACTTCC TCTGTCAGTA TTGTGCACAG AGATTTGGGC 1050
GAAAGGATCA CCTGACTCGA CATATGAAGA AGAGTCACAA TCAAGAGCTT 1200
CTGAAGGTCA AAACAGAACC AGTGGATTTC CTTGACCCAT TTACCTGCAA 1250
TGTGTCTGTG CCTATAAAAG ACGAGCTCCT TCCGGTGATG TCCTTACCTT 1300
CCAGTGAACT GTTATCAAAG CCATTCACAA ACACTTTGCA GTTAAACCTC 1350
TACAACACTC CATTTCAGTC CATGCAGAGC TCGGGATCTG CCCACCAAAT 1400
GATCACAACT TTACCTTTGG GAATGACATG CCCAATAGAT ATGGACACTG 1450
TTCATCCCTC TCACCACCTT TCTTTCAAAT ATCCGTTCAG TTCTACCTCA 1500
TATGCAATTT CTATTCCTGA AAAAGAACAG CCATTAAAGG GGGAAATTGA 1550
GAGTTACCTG ATGGAGTTAC AAGGTGGCGT GCCCTCTTCA TCCCAAGATT 1600
CTCAAGCATC GTCATCATCT AAGCTAGGGT TGGATCCTCA GATTGGGTCC 1650
CTAGATGATG GTGCAGGAGA CCTCTCCCTA TCCAAAAGCT CTATCTCCAT 1700
CAGTGACCCC CTAAACACAC CAGCATTGGA TTTTTCTCAG TTGTTTAATT 1750
TCATACCTTT AAATGGTCCT CCCTATAATC CTCTATCAGT GGGGAGCCTT 1800
GGAATGAGCT ATTCCCAGGA AGAAGCACAT TCTTCTGTTT CCCAGCTCCC 1850
CACACAAACA CAGGATCTTC AGGATCCTGC AAACACTATA GGGCTTGGGT 1900
CTCTGCACTC ACTGTCAGCA GCTTTCACCA GCAGTTTAAG CACAAGTACC 1950
ACCCTCCCAC GTTTCCATCA AGCTTTTCAG TAGGATTCTG GGACATGGAT 2000
TCATTACAGA AATGTATGTG TAGCTGTGCC CTAGATGACC ATTTTTATTT 2050
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ATTTTCATTA AGCCAGTATA AAATAGAAAC TAGCTTTTAA ACTGAGCTTT 2150
GGAACCATTT GTGTTCAGTT AAGTTTACCT GGGTATTTTG TCCTGATTCA 2200
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ATTATTAGTA GTAAACTTTT ACAAATCCCA TTTTCAAATT ACTTTTAGAT 2300
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TGGCTCATTA AAAAATTTAG CAATAGAATG TAAATTGTAT AAAAAGTTTG 2400
TGAATAACTC AAGGGTTTAA ATTTTCTTAC TAGCTTCTAA ATGGATTAAT 2450
AATCAAGTGC TTCAAATGAA TTAAGAGTCC AGTTTCGGAA GATAATAAAT 2500
GTTTGTTAGA TACACCATAA TTTCAGATCA GTATATTCTG AAGACTCTCT 2550
GTTGTCTGGC TAAAATATTT GCCATCTTTA TTATGAGCCT TTAAGGAAAA 2600
CAAACCCTAA ACACAAAGCA TCAGTATTTA TAGCAAAAAG AGACTCTGTT 2650
```

6/19 FIG. 4A (continued)

```
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CAGGATATTT TGTCGTGTTT CATCCTTCTT AACATGCTAT CTTTTCATTT 2750
AATAATAGTA ATAGTGTATG GCATTGGGGT CTTCAGAGTC GATATATAGG 2800
TAGATCTCTT TAGTCTTTTC CACCTTTCAC ATCCAAGGGG TGGGTCAAGT 2850
GCAGCCAGCA ATTTATTTTC ATTGTTGGCC CACGGTTAGT CCATAATCTA 2900
GAGCCATTGT GGAACTGCAG CCATGAGGTG TGTTTATCCC ACAGTGGATT 2950
GACTCAGCCT CTGTGGGTGA CAGACTTCTA AGCAGGAAGA TAGACGTGAA 3000
GCACATGGTT ACATTTGGGA ACTTGTGTAG GGATCATGGC CCCTGTAGCC 3050
AGGGTTAAAA ACTGGACTTT TTAGAAGTAA AGTAAAAGCA TAKCGCTTAT 3100
ATCATTTCTT GCTGAATTTG ATATGTTTTT CTTTCCCTTA AGAATCAAAA 3150
GCAGAAAACA AAAACAACAG TCCTACTCCG ATGTTATCTT TCTGATTCAA 3200
TGTGAATCCA TCTTTCCTTG CAATATTTTG GATGGAGAAT TTGAAGTTAA 3250
ATGCATTAGA AAACTACCTG ATGAACTACC ACAAAGTTTT AAGTGACTAG 3300
AAATATATAC AGTAAAATCC CACTTTCATG CATCTCTGGG AAATGATAGG 3350
AGTATTGCAA ATAAGTTGAG TTTGTAGAGG GTAACAAAGT AAAGTAAAAC 3400
AAACCTATCT TGGTTAACAT GAAAATAACA ATTGAGAATA TATTATATTC 3450
ACTGAATAAT TATAGGCTTT TCCTCACATT AGACAACCAA CATAATCTTC 3500
TTAAAGGTCT AATTAATATA TTTTTCTAAG GGTCAGTTGG GACATTAACC 3550
TAAGAAACAT ATCTATTAAG CACTTGTTAA CACCTTATTT TAGGACCCTT 3600
TCCGTTGGGG ATGGGGGCAA GGGTGGGAGG TTTTTAGAAG AGTATATATC 3650
TCTTTAAAAA AAAACAGAAA GAAAAATATT TCTGAGCACT CATTAGCCCT 3700
ATATGGAAAC TTCTTTCCTT TTTGTAGGGC CAGTTATCAC TGCAGATTGC 3750
AATGTTTACC AAGAATTTCT AAAAATGAGT GCAGATTACT GAATATAATA 3800
CATTATTTAA AATATTTGGG AGTAGTATAA TTTGTTGAGA AATGTAAATT 3850
GTAATAATGT AAATGGGGGG CTTCAATATA TATATATAAT ACACACACAC 3900
ACACACATGC ACACATACCG CACTTCATAG AATCAAAGTT GCTCTCTGAA 3950
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TGGAGCAGTA GTTTTTATAC TTATGTATTT AAATTTTATT ATGAAAAATT 4050
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TAAGGAAGTA CATTTTTAAA TTTTTCAAAC TGCTCCTAGC TTTTGATTAG 4150
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CCTTTAGTTT CTATGAAACA GATTGCTTAC CTAAATCTTT AGTTGAATGA 4250
TTAGTGTTCA ATATTGCTTT AATCACCATA TAAAAGGAAA AAAATTGGTG 4300
ACAGAGCACA AATAGAAAAC CTATTTTTAA ATAGAAATCA CAAATAGCAA 4350
GTGTGGAAGC ACTACTTTAT TCTGTTTAAA ATGTACTTAA GAAGTCATCA 4400
AATTAGTGAA CTGAGACATT GGCCTTAGTA GGCTGTATTC ACTGCTAATT 4450
TAAAAAAGGG AGTACCAGGA TTTATTAAGT AAAGCATTTT GGAAATGGGG 4500
AATAGCGCCA TATATGTATG TATGTGTATG TGTGTGTGTG GTGTGTGTAT 4550
ATATACACAC ACACATACAT ACTTAAATCT TGCCCTGCAT GAAATTCAAA 4600
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ATTTTCATGT GTACACCTCT TTGCCTGTTC CCACCCCCAG ACTTGAAATA 4700
ACACTTCAGA GTAAGAGGGA ATTCAGCTAA TTTGTTTTTA AAATTGACTG 4750
TAGTGGTCAC TAAACCCTTT TTGAGAGAAT TTCTATTAAA GATGAGGCAG 4800
ACTCGCTTAT TTGAATTGCA CAATGTTCTA ACAAGGATGT AACACAGAAT 4850
TGGCTTTTTT TTCCCTAGAA AAAGATTGTT TGTTTCTATG TCAACTAGAT 4900
ATGATTAAAA ATAAGTATTG CCAATGCTGT TTTCATTCTC TAGTGGCCAG 4950
AATCATTATC CTTGAAATTT CTGGTAGTGC CTTAGCTTGG TTAAAAAAAA 4500
AAAAAAAAAA AAAAAAAAAG GGATTAACAT TAAATAAAAG TAGTTTAGAA 4550
TTTGGGCCTC AGACAAGATA TTGAACCTCA TTCAGTTTCA CTTCCACATG 5100
TATGTACAAG TTAGGTCACC AAACACGGAA GTTGAGTGTG GAAGGATCTT 5150
GGCACTGTAA GCAATGCTAT CCATTGATGT ATACAAGTAC CTTTATAGTT 5200
ATCGATCACT GTTAAAACTT TCATTTTAAA ATCCTATTAC CAAGTTCAGT 5250
TTTTTAAAAC TTCAATTGTC CTGGCTGATT ATGCATCACT CTGTGTGCAA 5300
CTTTTTTATT TCATTTAGTG TTTCTTTCAA GCTGTGTATT TTTGCCTATT 5350
TGTTGCTTGT GCTTTATTTT TCTTAGTCAT TTGTGGAATA TAGTGATATA 5400
```

FIG. 4A (continued)

TTGTGTTAAT TTGGACAGTA GCGGTTTTTA AAAACCATAT ACTGACTGAA 5450
ACATGAGCCA GAGCCGATTG CTTTATTAAG CTAATAATGA ATGTTAAAGA 5500
GTACATATTT TCAGGATCGT TCATCTAGTG AGCAATACAC ATATTATAGG 5550
CCAATATTTT TTTAAAAAAT AGAGCTTGGT CAACCTCTAT ACTACACATA 5600
TTACAAGATA TAGCACTTTC AAAATGAATC TAAACCTTTA CAGAAACTTT 5650
CTTATAGGTT ATGCCTTTTA TTTTAAGACT TATTATAATT CAAGTGCCAT 5700
TAGATGATAT ATATGTAGGC CTTTGATATA TAATGCTTTG TGTACAAAAA 5750
TGGTAGATGG TATTTTAAAC AGGTACATTT TTACAGTGTT TTCTTATCAA 5800
TTTGCTATAT TGCACAGAAT CAGTGTGTGT CTTTTCATAA GGTTTTACAA 5850
TGGTTTATTT TTTTACAAGG TTTACGTGTC TCAAAGCACA CTGTCTTCCC 5900
AGTACGTAAG TTAAAAAATA CCAGTTCACC CAAGTTGCTT CTAGCCTACT 5950
GAGATCCATG TGACATTGGA GGAGATCTTT TAAATGTTTA GTATTCGTCA 6000
TTAGCAATGG CTGGCTGTTA GTTCTGGTAA ATGTGTGCCT AAGTTGAATT 6050
TGTCTTGTTT TTCTCACACT GTGTCAGCAG CCATGTCTAC AACACAGATA 6100
AGTCTGTTGT GATCACATAG ATCTACATAA GTTGTGCAGT TTTGTGCTAA 6150
AAACCCATAG GGAGCTCCTT TGGGATCATA GAAAAGAAGA TCATGCAACC 6200
AGCATTGGTG AAGGCACACT CAGATTGCAC TTAGGGCCTT TCTATGATGT 6250
TGTCAACCCT CTGAGGATGG AAGGCAGTGT CTTTTGATGT TATCTAGCCT 6300
AGAAATGACA CAGAACTATT GCTAATGTAT AAAACACTTC ATTATATAAG 6350
CTTCAGTGGT ACAGATGAAC CAGAATGAAT GTTTATCTTC TCAGAAACAC 6400
TCCTTCAATA TTATATTGGA TCATGCTGCT AATGTAACTT GGGCTACAAC 6450
TCTTCATGGT GCTACAAACT TCTCTGTCTC ATTCAGTCGT ATTTTTTTAT 6500
CCATAGAAAA AGGACTACAT TAGGTGTAAA AGTGTACAAT ATATTTTTAT 6550
ACTGTGACTT AATTTGTCAT TAACAAACTT TTACACCACC ACAATGTATT 6600
CATGTGCACT TGCAAAAGGA GATCTCGGAC ATGCAAATGT TACCAGAACA 6650
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TTGCATTTAA AATTGCTATT CTGTAATATT GGGAAATCAA GTGGCTTATC 7000
ATGTATATCG TGTACTTAAA ATGTATTCAC AAACTACTGT TGTATTTGTA 7050
TAAAATATAG ACAAAGATCA TATTTTTTGT GTGTGTATAA GCTCTGTAAA 7100
ATAGCAATCA CATTATGAAG CTGCAGTGAT ACTACATTTT AAACATTCAC 7150
ATCCAAAGAA GCAGACTATT TATTGTCCAT ATACCAGATT TAAAATATTA 7200
ATTTGCTGCT AATTAAATAA TAGTACTGCA GCTTCTTGTG GCCTACAGTG 7250
TTATGTTTGC TGTAAGAATA AGATATGTGA ATTCCACAAA ATATATGAAT 7300
AAAATCTCGT GCC 7313

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PLAG1  Finger 1   FPC..QLCDKAFNSVEKLKVHSYS.HTGERP
PLAG1  Finger 2   YKCIQQDCTKAFVSKYKLQRHMAT.HSPEKT
PLAG1  Finger 3   HKC..NYCEKMFHRKDHLKNHLHT.HDPNKET
PLAG1  Finger 4   FKCEE..CGKNYNTKLGFKRHLAL.HAATSGD
PLAG1  Finger 5   LTC..KVCLQTFESTGVLLEHLKS.HAGKSSGGVKEKK
PLAG1  Finger 6   HQCEH..CDRRFYTRKDVRRHMVV.HTGRKD
PLAG1  Finger 7   FLC..QYCAQRFGRKDHLTRHMKKSHNQELL

PLAG1  Consensus  ..C....C...F.....L..H....H.....

C2H2   Consensus  FxCxxxxCxxxFxxxxxLxxHxxxxHxxxxx
                  Y
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FIG. 4B

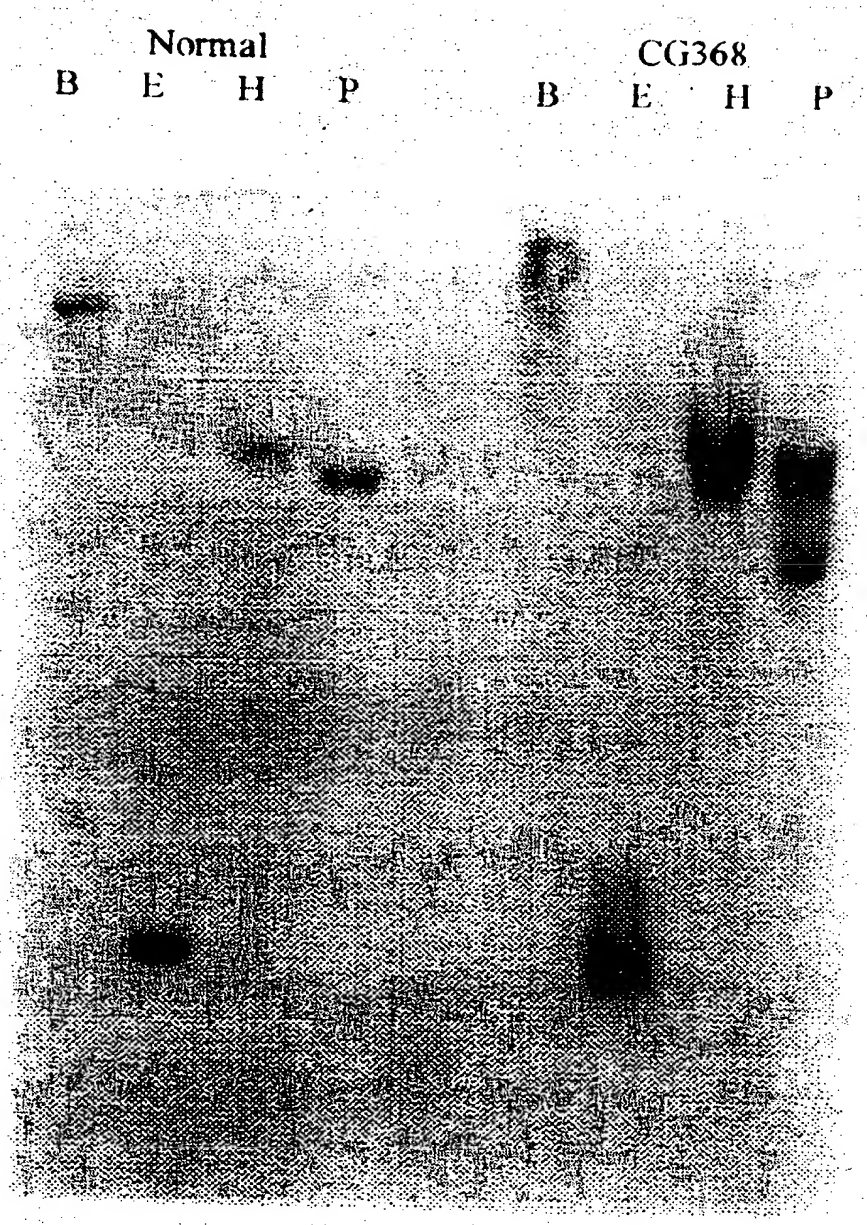
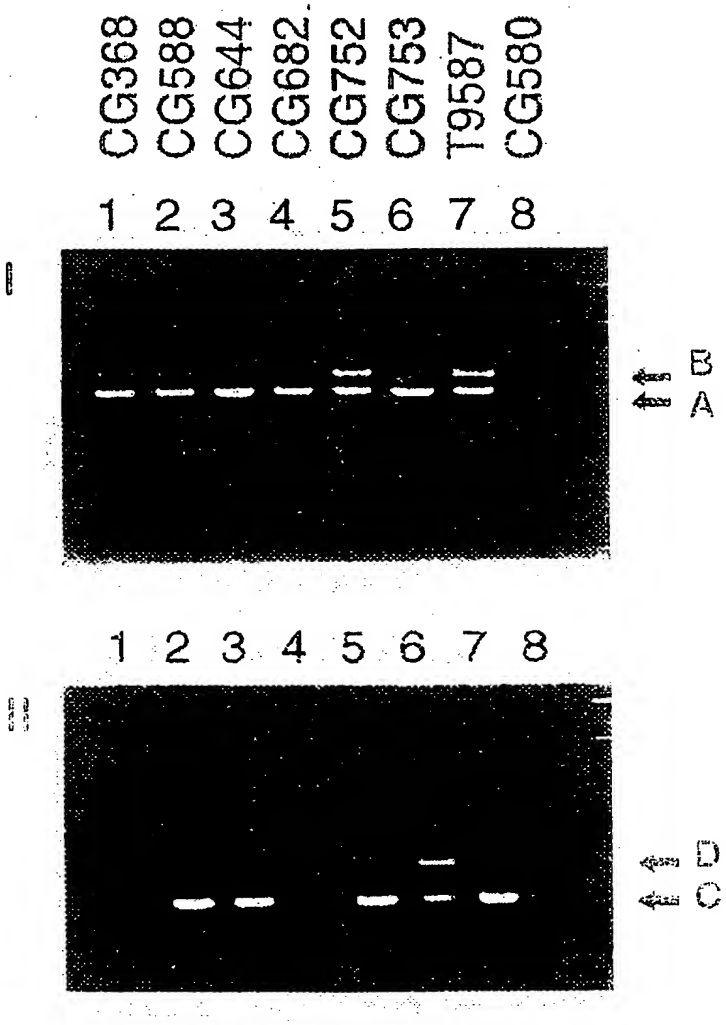


FIG. 5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CG588
CG644
CG682
CG752
CG753
T9587
CG580
1 2 3 4 5 6 7 8
B
A
1 2 3 4 5 6 7 8
D
C

FIG. 6A

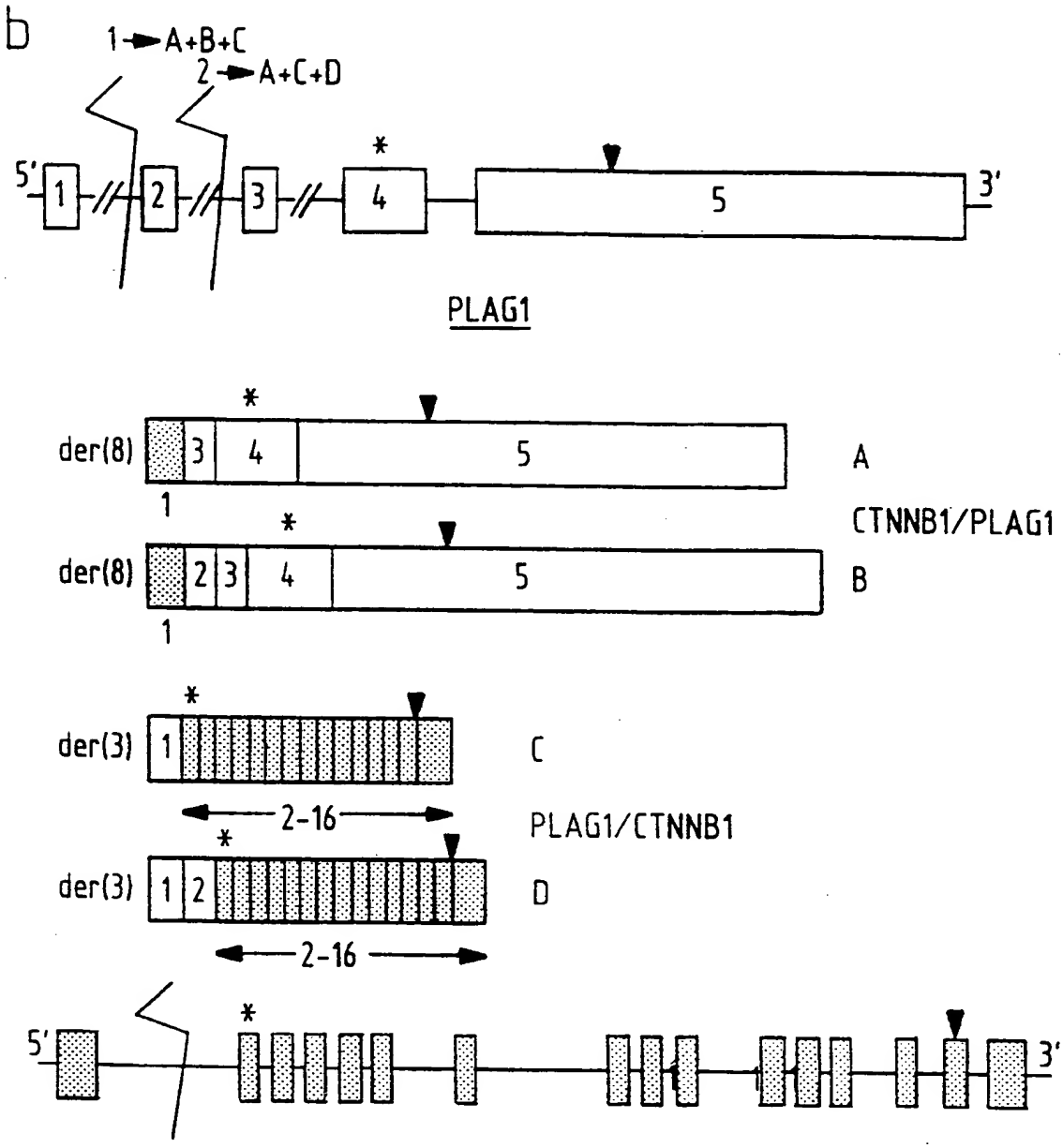
b
1→A+B+C
2→A+C+D
5'
3'
PLAG1
der(8)
A
CTNNB1/PLAG1
der(8)
B
der(3)
C
2-16
PLAG1/CTNNB1
der(3)
D
2-16
5'
3'
CTNNB1

FIG. 6B

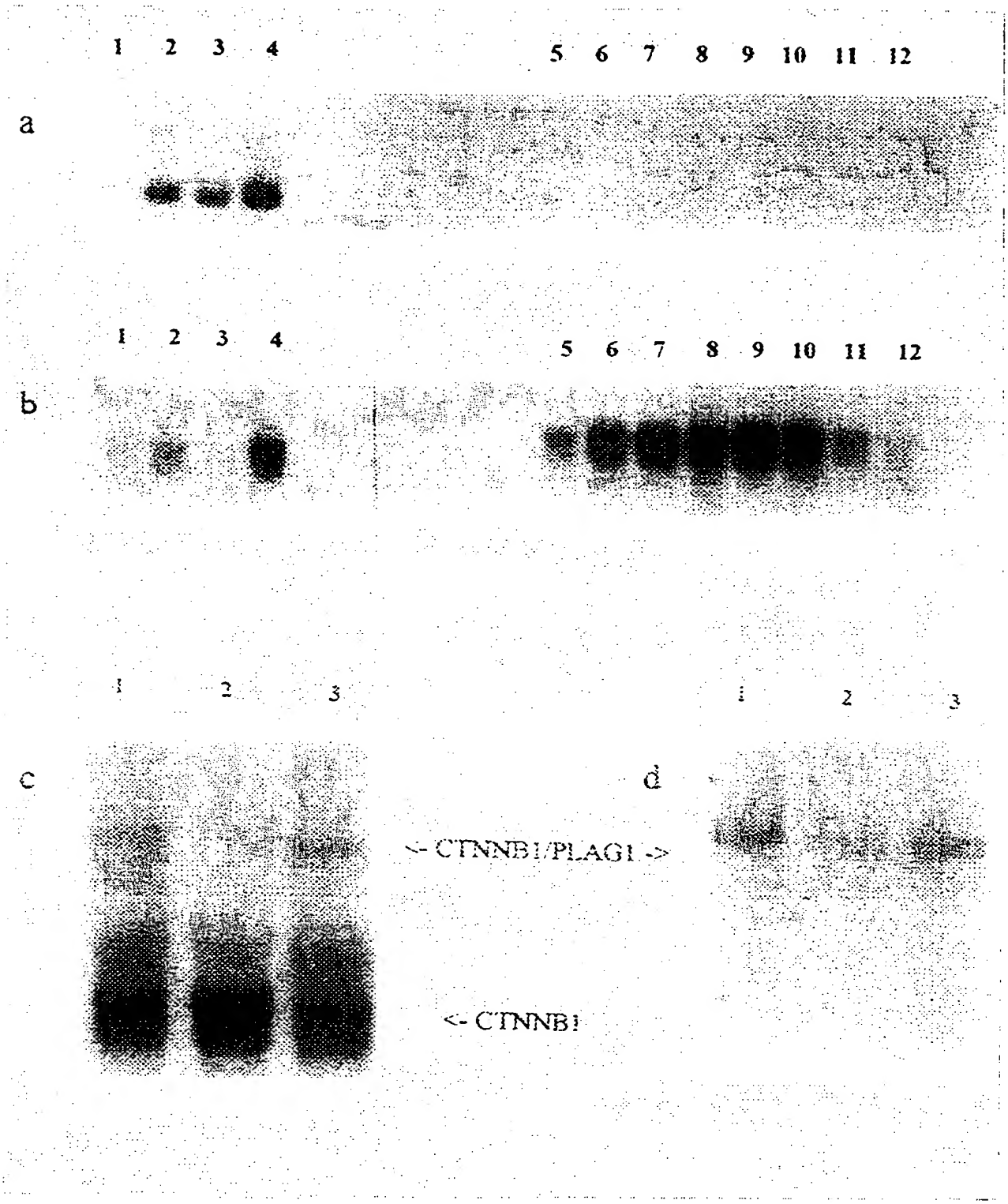
1 2 3 4 5 6 7 8 9 10 11 12
a
1 2 3 4 5 6 7 8 9 10 11 12
b
1 2 3
c
1 2 3
d
<- CTNNB1/PLAG1 ->
<- CTNNB1

FIG. 7

PLAG2 cDNA and Open Reading Frame (underlined) FIG.8A

AGGCTCAAGATAAAGACCTTAAAGATAACTTTGTGTGTCTCTCCCTTTCTAGGTATTTGCATAGGAATCAGAGGA
GTTAATCTTGTCTCTTCTCACAGGTTTGAATCTTCAGACAAACTTCTGGGAGGACTCGGTCCCTGCCTCGCAGCA
GATGTTCCCTGTCACTCAGTAGGCATATGGCTACCCATTCTCCCCAGAAATCTCACCAGTGTGCTCACTGTGAGA
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GTGCCAATCTGTCCTGAGTGTTCATGCTTTGTACCAAATTTAATGAACGCGTGTTCTGTAATCCAAACTGCAAAT
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CATATACATTTTCTTGTGGAGCAATAGAGTTCTCCATTTTACAGAAGCATTTTAAATGTAGTTTGAATATTTTCC
ACAAGATGCTGCAATGTGAGTTATCACTTCATTTATCTTAAAGAAAGACTAAACTGGTTGTCAGTTACATCTGAC
AGAAAAAAAAAAAAAAATCACTGTGTAACCAGGTTAAGTGGTAAAATAATCCAGGGCGTCAGTCAAAGGCATTTTG
CTGACTTTAATATTGATTATATTTTTAACAGGGAATTTAAGGAAAATATTACCTGGGAATTAAAAAATATATATA
TATTAAAACAAGAATTTTCCTTTGCCTCTGTCTAGCTTAAACCTACTACCTCAAGCTGCTTAAGKTCCTTAAGTA
TTGTTTGTAATCACCAATAAATAAGTGCATTTGTAATTCATCAGTCATTATTAGCTTTTATTAAAAGAAGATTAC
GTTTTACAATGTAACTATAATCTCTTGAATTTGGTATCTTATTAATGAGTTTTAAAGATGTAAAACCTAACCTTT
TTTAAAGCTCCATTGTCTTATGTTTTTAGAGGCTTTTCCGTAAACATATATCTTACATATAATAAACTTTTCAAA
TCTTGCAAATT

PLAG2 protein

MATHSPQKSHQCAHCEKTFNRKDHLKNHLQTHDPNKMAFGCEECGKKYNTMLGYKRHLALHAASSGDLTCGVCAL
ELGSTEVLLDHLKAHAEEKPPSGTKEKKHQCDHCERCFYTRKDVRRHLVVHTGCKDFLCQFCAQRFGRKVHLTRH
TKKTHSQELMKESLQTGDLLSTFHTISPSFQLKAAALPPFPLGASAQNGLASSLPAEVHSLTLSPPEQAAQPMQP
LPESLASLHPSVSPGSPPPPLPNHKYNTTSTSYSPLASLPLKADTKGFCNISLFEDLPLQEPQSPQKLNPGFDLA
KGNAGKVNLPKELPADAVNLTIPASLDLSPLLGFWQLPPPATQNTFGNSTLALGPGESLPHRLSCLGQQQQEPPL
AMGTVSLGQLPLPPIPHVFSAGTGSAILPHFHHAFR.

FIG. 8B

FIG. 9 **Nucleotide sequence of cDNA of <u>CTNNB1</u> (ß-catenin)**

```
   1 aagcctctcg gtctgtggca gcagcgttgg cccggccccg ggagcggaga gcgaggggag
  61 gcggagacgg aggaaggtct gaggagcagc ttcagtcccc gccgagccgc caccgcaggt
 121 cgaggacggt cggactcccg cggcgggagg agcctgttcc cctgagggta tttgaagtat
 181 accatacaac tgttttgaaa atccagcgtg gacaatggct actcaagctg atttgatgga
 241 gttggacatg gccatggaac cagacagaaa agcggctgtt agtcactggc agcaacagtc
 301 ttacctggac tctggaatcc attctggtgc cactaccaca gctccttctc tgagtggtaa
 361 aggcaatcct gaggaagagg atgtggatac ctcccaagtc ctgtatgagt gggaacaggg
 421 attttctcag tccttcactc aagaacaagt agctgatatt gatggacagt atgcaatgac
 481 tcgagctcag agggtacgag ctgctatgtt ccctgagaca ttagatgagg gcatgcagat
 541 cccatctaca cagtttgatg ctgctcatcc cactaatgtc cagcgtttgg ctgaaccatc

 601 acagatgctg aaacatgcag ttgtaaactt gattaactat caagatgatg cagaacttgc
 661 cacacgtgca atccctgaac tgacaaaact gctaaatgac gaggaccagg tggtggttaa
 721 taaggctgca gttatggtcc atcagctttc taaaaaggaa gcttccagac acgctatcat
 781 gcgttctcct cagatggtgt ctgctattgt acgtaccatg cagaatacaa atgatgtaga
 841 aacagctcgt tgtaccgctg ggaccttgca taacctttcc catcatcgtg agggcttact
 901 ggccatcttt aagtctggag gcattcctgc cctggtgaaa atgcttggtt caccagtgga
 961 ttctgtgttg ttttatgcca ttacaactct ccacaacctt ttattacatc aagaaggagc
1021 taaaatggca gtgcgtttag ctggtggct gcagaaaatg gttgccttgc tcaacaaaac
1081 aaatgttaaa ttcttggcta ttacgacaga ctgccttcaa attttagctt atggcaacca
1141 agaaagcaag ctcatcatac tggctagtgg tggaccccaa gctttagtaa atataatgag

1201 gacctatact tacgaaaaac tactgtggac cacaagcaga gtgctgaagg tgctatctgt
1261 ctgctctagt aataagccgg ctattgtaga agctggtgga atgcaagctt taggacttca
1321 cctgacagat ccaagtcaac gtcttgttca gaactgtctt tggactctca ggaatctttc
1381 agatgctgca actaaacagg aagggatgga aggtctcctt gggactcttg ttcagcttct
1441 gggttcagat gatataaatg tggtcacctg tgcagctgga attctttcta acctcacttg
1501 caataattat aagaacaaga tgatggtctg ccaagtgggt ggtatagagg ctcttgtgcg
1561 tactgtcctt cgggctggtg acagggaaga catcactgag cctgccatct gtgctcttcg
1621 tcatctgacc agccgacacc aagaagcaga gatggcccag aatgcagttc gccttcacta
1681 tggactacca gttgtggtta agctcttaca cccaccatcc cactggcctc tgataaaggc
1741 tactgttgga ttgattcgaa atcttgccct ttgtcccgca aatcatgcac ctttgcgtga
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SUBSTITUTE SHEET (RULE 26)

FIG. 9 (continued)

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1801 gcagggtgcc attccacgac tagttcagtt gcttgttcgt gcacatcagg atacccagcg
1861 ccgtacgtcc atgggtggga cacagcagca atttgtggag ggggtccgca tggaagaaat
1921 agttgaaggt tgtaccggag cccttcacat cctagctcgg gatgttcaca accgaattgt
1981 tatcagagga ctaaatacca ttccattgtt tgtgcagctg ctttattctc ccattgaaaa
2041 catccaaaga gtagctgcag gggtcctctg tgaacttgct caggacaagg aagctgcaga
2101 agctattgaa gctgagggag ccacagctcc tctgacagag ttacttcact ctaggaatga
2161 aggtgtggcg acatatgcag ctgctgtttt gttccgaatg tctgaggaca agccacaaga
2221 ttacaagaaa cggctttcag ttgagctgac cagctctctc ttcagaacag agccaatggc
2281 ttggaatgag actgctgatc ttggacttga tattggtgcc cagggagaac cccttggata
2341 tcgccaggat gatcctagct atcgttcttt tcactctggt ggatatggcc aggatgcctt
2401 gggtatggac cccatgatgg aacatgagat gggtggccac caccctggtg ctgactatcc
2461 agttgatggg ctgccagatc tggggcatgc ccaggacctc atggatgggc tgcctccagg
2521 tgacagcaat cagctggcct ggtttgatac tgacctgtaa atcatccttt agctgtattg
2581 tctgaacttg cattgtgatt ggcctgtaga gttgctgaga gggctcgagg ggtgggctgg
2641 tatctcagaa agtgcctgac acactaacca agctgagttt cctatgggaa caattgaagt
2701 aaacttttg ttctggtcct ttttggtcga ggagtaacaa tacaaatgga ttttgggagt
2761 gactcaagaa gtgaagaatg cacaagaatg gatcacaaga tggaatttag caaaccctag

2821 ccttgcttgt taaaattttt ttttttttt ttttaagaat atctgtaatg gtactgactt
2881 tgcttgcttt gaagtagctc ttttttttt ttttttttt ttttttgca gtaactgttt
2941 tttaagtctc tcgtagtgtt aagttatagt gaatactgct acagcaattt ctaattttta

3001 agaattgagt aatggtgtag aacactaatt aattcataat cactctaatt aattgtaatc
3061 tgaataaagt gtaacaattg tgtagccttt ttgtataaaa tagacaaata gaaaatggtc
3121 caattagttt ccttttttaat atgcttaaaa taagcaggtg gatctatttc atgtttttga
3181 tcaaaaacta tttgggatat gtatgggtag ggtaaatcag taagaggtgt tatttggaac
3241 cttgttttgg acagtttacc agttgccttt tatcccaaag ttgttgtaac ctgctgtgat
3301 acgatgcttc aagagaaaat gcggttataa aaaatggttc agaattaaac ttttaattca
3361 tt
```

FIG. 10

STSs used to generate the 300 kb cosmid contig mapping at chromosome 8q12 and encompassing PLAG1

STS CH129
GAATTCTAAAACCATTTATAAATCATACTGAATCCCAGAACAATATATTTTAAACAACTTAA
AAAAAAGAACAAAATAAAATAGCAAAACATTTTTAAGAGTGTAGATTCTTTGAAATTAAAGG
ACATACTTACCCTGTAGT

STS CH280
GAATTCTTGCACCGGTTTTTTCTTATCAGTGTGGGCTGATGTTCCATTAACTGTGGTGTAAT
TTGAGTATAGTCACTGACTGATTCTAGATATTTTCAGAGGGTCAAGACTTTTTCTAAGACCT
TTATATGTGGTTGAATTCTTGTTCTTGGTTTCACAGAAGGTATATTAGCAAAGCATTTTTGG
TGTTGAAGCTTGGTCTGTGATCTAGT

STS CH33
GAATTCGTTTTTATTTGACAAGCACATGAAGCCTTATCAGACGGAGGCCTCAATCCTTTGGC
TGGGGTTTATAAGCAGGTAGCGCTAGACCTTCCCATTCTACATAAGCTGATGGGCACGGTAA
TAGCTGGGGGTTTTCTCACAAGTCAAAGACAAATTGTCTGTTTTCAAGCGTGTGAAACAGTT
wAAWACGTTTGAGGTCTCTCTCTTGCTTCATAGGCCATCTTGGCTCAGACATTCTACAGMCA

STS EM156
TCTGAGCAACAAGAGCGAAACTCCATCTCAAAATATATATATATATAGGTAATTGTTGTCAT
TAATATTAATGTAGTAGCAGCAGCAACAGTCATGGTAGCAATATTGCTCTATTTGGGAGGCA
ACTTATAATTATTAACTGTGGAATATCTTTGAAAAATGTTTTTNGCAGAMGTTATGTTCCCA
TTCCTGACTGGMGCTCATTATAAATACCCATCTTCTCTGAATAGCGCAAGGACTTTTGAAAA
AGTGTTCTGAGTAAAC

STS EM195
ACAATCAATTTTAGAAAGTAATCATTTCATTACCCCAAACTGAAACCCTGTACCTGTTAGCA
CTCACTCCCCTTTTCATTTTACTTTTTATTTATTTATTTTTTTGAGAGAGACTTGCTCTATC
GCCCNGGCNVCAGTGCAGTGGCACAaTCTCAACTCACTGCAACCTCTGCCTGCCAGGGTCAA
GTGATTCTTGTGCCTCAGAGTCCCAAGTACCTGGGATTACAGGCATAAGCCACCACGCCTGG
CTAAATTTTGTATTTTCAGTAGTGACGGGGTTTCACCATGTTGGCCAGGCTGTCTCAAACTG
CTGACCTCAGGTAATCCACCCTCCTCAGCCTCCCAGAGTTCTGGGATTACAGGCGTGACACC
GTGCCTGGCTCATTTTATTTTTTAGAGATGAGATCTCACTCTKWTTGCCCAGGCTTCAGTGC
ATTGGCGTCATGATGGCTCACTGCAGGCTTCAGCTCCTGGCCTCAAaGCATCCTTCCGCCTCA

STS EM208
CTAGGCGACAGAGCAAGACTCTGTCTCAARGAAAAAaAAAAAaVRAAAAAAATTACCAAAAC
TGACTACAGAAAAVHGVARGGTTGAATAGCCTTACATTTGGVAAATAATTTTTATTTATAAT
TAAAGATATTTTTATAAAAVVTACTCTAGGCCCATAAGGCTTCACAGGTTAATTGTATTAAA
TATTTAAGGAAAAAATAATACCAATCTTATTCATAGTCTTTCAGAAAATAGAGGCGTATCCA
TTTTTCTAACTCATTTTAAGAAATAGCATCATTCTAATATCAAAAGCAAACAAGGMCATTGC
AAAGAAGAAGGGGAAGAAGGAAGAGGAAGAGGAGGAGAAAGGGAAGCAGGAGATGGAGAAGA
AGGAAGCCAGGTACAGTGCAATATTTCTCATGAACATAAACACAATTTTTAAAAAGTATTAM
CAGGCTGGGCTTGGTGGCTCTCACCCGTAATCCCAGCMCTTTGGAAGGCCcAAGGCGGGTGG
GHCACAAGGTCAGGGGTTCGAG

FIG. 10 (continued)

STS EM216

TACTRACTGCTGTGCAGTTBTCcTGCAGTCAGTTCCAGAGGTCATTTCTAACGTTGCACTAT
GGGKCTATTTAATAGGTTTCCTAAAGAACAAACATATCTCTTTAbAGTTACTCAGAGGGTAC
ACAATGATGATGTCACACAATTAATTACCTATTAAGACTGAAATCCAGCAATGCATAGKGTG
TGGACTTTACGCACATCCAGAAAAAGTTCTAGCACAAATTGTTTTHGTMTYATATATTTCAG
AAGCCATAGAAACACTATTAAAGCCCTCCCTAATCACTTAGGGATGCAAAaTCAATAT

STS EM317

GACCAACAAAGGCACACAAAGATTGGTTGCTTTCTGAAGAATCTAAAAATGGCATTGGGTAT
AGGAGTTGGGGAAGCAAGTTGTATAGGCACCTACACTTAAGATAATTTGTCAATTATACAAA
TAATTTTTAAAGTTTAAGCCCCTTTCTGACATGACACGTCCATGGGTCCTTCACCCTTYTtK
KTCTCCTSCAGAGCTCCAGTCTGCCYYTTYTTKSCTCTGAGCTCCAAAAMCAGTGAWTCCCC
TGAAGTTACCTAGMCCCMCCATACAGTTTGTGACTCCCTAWMCcGGGGGTACCyTCCCATGY
CTGGCTAATAyTGABTYTTGTDTACCGTGGCTTCTGTGTTACTACATTTGTTTTARTGGAAT
TWATwAArGGGAAGCCTATCAA

STS EM416

GAGCAACTGAaCDNAGATTGGGTGAGGTAAGATGTGGGCTGCACAGGTGAGGCTGGAGAGGT
GGGGAGTGCGTCCCAGTCGGGGGAGAAGAAGAAAAGGGCAGACTAGGGTAGAAATGCTTATW
ACTcCTGTGACTGGAGCTGATGGTGTCTTAAGGAAAGTGGTGGGAAGGGAGGVCTGCAGAAA
GGCAAGGCTGGAGTCGACTGAAGGCTGGAGAGCCACTGCTTTAACAAGTGTAMCTGGAGATG
GAAGGGGCTGCAGGACAGGTCACTCAGCCAGTKGTGTGGARGCAATCTCACC

STS EM443

TTGATATTTGTTCTAACTCCACATTAACTATTGACAAATACTCTAAATTGTAGCTACCATCT
GTTACGTAGCTAGCAGGTACCCTAACAGCAATGGGTCAGCTTTTGAGTAGCGTTTCAACCAT
GTTACCTCGAGTACGGTGTGGTGAGGCCAGACGCAGATGGAGAGAAAGAAACAGAATCGAGC
ATTTCCATTTTGTTTTGCTCACAGTCCCCAGGGGCAAACACAGCACAGCCTACAGGACCATG
AAGGGGAGCACTGGGGTCACTCATGAAGCAGGGAGGTCGGGCCAGTGGTGGGGGgCCTTTAT
GTGTTTTCCTCAGGAAGGAATGGGCAAGGCAGGGTAAGCATGTTCAGGACTGGTTAATTTGA
ATAACTTCAGGGGGgCTCTAGGGCCTGgRGGCTGCCCCTGGTTGTCTGGTACCYgGSCCTG

STS EM46

ATATCAATCTTGGGTCTATGTATGTTTTTGCTTTTCCCcAGTGTTCCAGGCATGATGCTAAG
GATATAGTGGATGATGAAATATATGCTTGCTGAATATGGGAATAAGAATTATTTTATGATCA
GAHTTTTTTTTTTTGAGATGGAGTCTCGCTCTGTCAcNMaGGCTVGTGTGCAGTGGCATGAT
CTCAGCTCACWGCAACCTCTGVCTCCTGGGTTCAAGTGATT

STS EM47

GTAGAGACACACTAGGCATGCACAGACCAGTGCAGAATGAACAATATTTGTTACATGTGTAG
TTCTTTATGGTTTACAAAACTCTCCCAGCCATTATCTTCTTTCAGCCTTATAAAAGACAGAG
CATATTTTATTATCCTCATTTACCTWHTCTAGTAAGGCATTTTTTCTTTTTTTCTTACTAGA
GATATAAGGCTTAGGAAAAAAGTGAATACTACGATAAATGAATACTAGGAAAAGACATCACA
ATCACAAATTTATTAATATCAGAAAACAGDTTTTAAGAATAAAATWTTCAAWAARgAAA

FIG. 10 (continued)

STS END2
TAATTTATCACTACGGAATTCTGTGCAGTGAGATCAAAGAGCTGTGTATGCCCATAATGTGA
TTTTACAGCCATTTTGTAAAAACTGTAAAATACCTTAATATTCAATTTGGCTTAAGGTACAT
TGAGGACTTCTGGTTGAAAATTACAGAGTGGTGAAGATTC

Known STSs
PENK
D8S285
MOS

STSs part of PLAG1
EM265
KK64
KK63/EM209
KK55/CH283
EM224
EM387